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STUDIES OF PERUVIAN BIRDS. NO. XXX[1]

NOTES ON THE GENERA *CONTOPUS*, *EMPIDONAX*, *TERENOTRICCUS*, AND *MYIOBIUS*

BY JOHN T. ZIMMER

I am greatly indebted to Mr. Clifford C. Gregg, Director, and Mr. Rudyerd Boulton, Curator of Birds, of Field Museum of Natural History, Chicago, for the loan of certain comparative material used in the following studies.

Names of colors are capitalized when direct comparison has been made with Ridgway's "Color Standards and Color Nomenclature."

Contopus fumigatus fumigatus
(D'Orbigny and Lafresnaye)

T(yrannus) fumigatus D'ORBIGNY and LAFRESNAYE, 1837, Mag. Zool., VII, cl. 2, Syn. Av., p. 43—Yungas in Bolivia; Paris Mus.

Specimens from extreme southeastern Perú agree with darker examples of *fumigatus* although they are far from the pale extremes of that form. The transition from *brachyrhynchus* is fairly rapid since that Argentine subspecies occurs in eastern Bolivia in the Province of Sara.

Comparison of *brachyrhynchus* with *minor* of Nicaragua shows such similarity between these two forms that it leaves no doubt of their specific affinity. The series is not an unbroken one. From *pallidiventris* to *minor* there is a fairly even transition. I have seen no definite intergrades between *minor* and *lugubris* but *minor* is close to *brachyrhynchus* while *lugubris* is not far out of place between typical *fumigatus* and *ardosiacus*, although the strong olivaceous tone of some examples forms a sort of link to the dark specimens of *pertinax* found in Guatemala. When the series is arranged according to appearance, without regard to geographical ranges, the interrelationship is apparent.

In any case I can see no good reason for maintaining three species for the *pertinax-lugubris-fumigatus* group which should be grouped under the oldest name, *fumigatus*.

Contopus fumigatus ardosiacus
(Lafresnaye)

Tyrannula ardosiaca LAFRESNAYE, 1844, Rev. Zool., VII, p. 80—"Colombie" = Bogotá.

Peruvian specimens of this species are exceedingly difficult to assign to one form or another but they possess no characters of their own that would justify making a separate subspecies for them. Specimens from the extreme southeastern part of the country perhaps are a little closer to typical *fumigatus*, under which they are discussed further, and examples from the western side of the western Andes in the northwest are closer to *zarumae*. The inhabitants of all of the rest of the country within the range of the species are intermediates, without any geographical allocation of the resemblances to one form or another. Some of the specimens match the average of *ardosiacus* from Colombia rather closely although none is as dark or as clear gray as the extremes of that form, and others are very similar to certain topotypes of *zarumae*, without reaching the extreme paleness of marked examples of that subspecies. One Urubamba Valley specimen could be placed in true *fumigatus* with some dark specimens of that form, but other Urubamba skins are more like *ardosiacus*. In view of the greater average resemblance of central Peruvian specimens to *ardosia-*

[1] Previous papers in this series comprise American Museum Novitates, Nos. 500, 509, 523, 524, 538, 545, 558, 584, 646, 647, 668, 703, 728, 753, 756, 757, 785, 819, 860, 861, 862, 889, 893, 894, 917, 930, 962, 963, and 994.

cus than to either adjacent form, I refer all Peruvian records to that form except those from the extreme southwestern part of the country and those from the western side of the western Andes.

Records thus assigned to *ardosiacus* are from Torontoy, Chanchamayo, Garita del Sol, Paltaypampa (Junín), Auquimarca, Cocochó, Tambillo, Ninabamba, Molinopampa, and Tabaconas.

Taczanowski (1874, P. Z. S. London, p. 539) recorded specimens from Higos and Auquimarca under the name "*Myiochanes cineracea*," at the same time listing two other birds from Auquimarca as "*Contopus ardesiacus*." I have been unable to find any later references to the Higos and Auquimarca specimens of "*cineracea*," nor any records of other Tyrannidae from Higos that might have been confused with a *Contopus*, with one exception. The report on the collection including the Higos material (t. c., p. 533) does not mention Higos as a locality for "*Cnipolegus anthracinus*" but in the "Ornithologie du Pérou" Higos is added to the records. There is a faint possibility that Taczanowski's "*Myiochanes cineraceus*" supplies this missing Higos record though the resemblance between the two species is slight. The Auquimarca specimen of "*cineraceus*" would not be accounted for in this way; perhaps it was *C. f. ardosiacus* like the birds recorded by Taczanowski as "*Myiochanes ardesiacus*," also from Auquimarca.

I am unable to place birds from Mérida, Venezuela, with *ardosiacus*. Of nine specimens from this region, one might be assigned to *ardosiacus* but the other eight are much closer to *cineraceus*.

Contopus fumigatus zarumae (Chapman)

Myiochanes fumigatus zarumae Chapman, 1924 (Oct. 18), Amer. Mus. Novitates, No. 138, p. 4—above Zaruma, Ecuador; ♂; Amer. Mus. Nat. Hist.

Specimens from Palambla and Seques, on the western side of the western Andes, appear to belong to the west-Ecuadorian subspecies. There are no other Peruvian records.

Specimens Examined

C. f. brachyrhynchus.—Argentina: Jujuy, 1 ♂, 2 ♀; Tafi Viejo, 1 ♂. Bolivia: "Camp Woods," Prov. Sara, 1 ♀.

C. f. fumigatus.—Bolivia: Todos Santos, 1 ♀; Incachaca, 1 ♀; Mapiri, 1 (?); California, Santa Cruz, 1 ♂; (no locality), 1 (?). Perú: Inca Mine, 1 ♂; Chaupichaca, 1 ♂.

C. f. ardosiacus.—Perú: Urubamba Cañon, Santa Rita, 1 ♂; San Miguel, 1 ♀; San Miguel Bridge, 1 ♀; Rumicruz, Junín, 1 ♂; Chilpes, 3 ♂, 1 ♀; Utcuyacu, 1 ♂; Cushi Libertad, 1 ♂; Nuevo Loreto, 1 (?); Chaupe, 4 ♂, 1 ♀; Uchco, 1 ♂; La Lejia, 2 ♂, 2 ♀; Lomo Santo, 1 ♂. Ecuador: Baeza, 2 ♂, 3 ♀. Colombia: Aguadita, 2 ♂, 1 ♀; El Roble, 1 ♂, 1 ♀; Ricaurte, 1 ♂, 1 ♀; Río Toché, 1 ♀; Fusugasugá, 1 ♀; La Candela, 1 ♂, 1 ♀; Buenavista, 1 ♂; Paramillo Trail, 1 ♂; Anolaima, 1 ♂, 1 ♀; above Salento, 1 ♀; San Antonio, 1 ♂, 1 ♀; Gallera, 1 (?); Cerro Munchique, 1 ♂; Panamá, above Pacho, 1 ♂; Palo Hueco, 1 ♀; Las Mesitas, 1 (?); "Bogotá," 1 (?).

C. f. zarumae.—Ecuador: Zaruma, 4 ♂ (incl. type), 3 ♀, 1 (?); Portovelo, 1 ♂, 1 ♀; Pallatanga, 1 ♂; Salvias, 1 ♀; Alamor, 1 ♀; El Chiral, 2 ♀; La Puente, 1 ♂; Cebollal, 1 ♂; Huigra, 1 ♀; Gualea, 1 ♂, 1 ♀; west side of Pichincha, 1 ♂. Perú: Palambla, 1 ♂, 4 (?); Seques, 1 ♀, 1 (?).

C. f. cineraceus.—Venezuela: Loma Redonda, 1 ♂; Galipan, 1 ♀; Mérida, 4 (?); El Loro, 1 (?); Páramo de Mono, 1 ♀; Santo Domingo, 1 ♂; Valle, 2 ♂.

C. f. duidae.—Venezuela: Mt. Duida, Summit, 1 ♂ (type); Laterite Valley, 1 ♂, 2 ♀.

C. f. subsp. ?.—Venezuela: Mt. Roraima, 1 ♀.

C. f. lugubris.—Panamá: Boquete, Chiriqui, 5 ♂, 1 ♀. Costa Rica: 10 ♂, 4 ♀.

C. f. minor.—Nicaragua: 2 ♂ (incl. type), 4 ♀, 1 "♂" (? = ♀).

C. f. pertinax.—Guatemala: 9 ♂, 8 ♀, 3 (?). Mexico: (Sinaloa, s. Jalisco, Vera Cruz, Chiapas) 13 ♂, 11 ♀, 1 "♀", 1 (?) (some of these are very close to *pallidiventris*).

C. f. pallidiventris.—Mexico: (Durango and San Luis Potosí) 2 ♂. United States: Arizona, 21 ♂, 12 ♀, 1 (?). Guatemala: 1 ♂ (migrant).

Empidonax euleri euleri (Cabanis)

Empidochanes Euleri Cabanis, 1868, Jour. für Orn., XVI, p. 195—Cantagallo, Rio de Janeiro, Brazil; juv.; Berlin Mus.

There are several records of supposedly typical *euleri* from Perú but I have examined only one specimen which, in the light of comparative study of a fairly large amount of material, I can place without hesitation in this subspecies. Anticipating a fuller discussion on a subsequent page under *E. e. bolivianus*, it may be

stated here briefly that the juvenal plumages of *lawrencei* and *bolivianus* are very similar to those of *euleri* and *argentinus* and that even the first annual plumages of the normally greenish forms may bear considerable resemblance to adult *euleri*. Consequently there is considerable chance for confusion in identity of some specimens which is further complicated by the fact that *euleri* and *argentinus* migrate into the breeding range of *bolivianus*.

I have examined specimens of *euleri* dated between September and March from the Misiones region of Argentina, from Uruguay, and from southeastern Brazil between Rio Grande do Sul and Minas Geraës, but I have seen no specimens from this area collected during the remainder of the year. For the period between April and August, inclusive, there are birds from the Rio Madeira, the lower Rio Negro, the Rio Tapajoz, and the state of Maranhão, Brazil, the Cochabamba region of Bolivia, a locality west of Puerto Pinasco, Paraguay, and Yurimaguas, northern Perú, but I have no material from this diffuse area collected at other times of the year. It appears probable, therefore, that the two regions comprise, respectively, the breeding range and the migratory and winter range of typical *euleri*. From various localities in this migratory and winter range there also are specimens of *bolivianus* which evidently is the resident breeding form at these places.

The Peruvian records which have been referred to *euleri* are from Monterico, Jeberos, Chayavitas, Pebas, Huambo, and Yurimaguas (another bird from the one I have seen). Since it is certain that *euleri* does reach northern Perú in migration, these records may be tentatively left here but the specimens should be reëxamined to be sure that all of them certainly belong to this form.

Empidonax euleri argentinus (Cabanis)

Empidochanes argentinus CABANIS, 1868, Jour. für Orn., XVI, p. 196—Buenos Aires, Argentina; Berlin Mus.

There is considerable evidence now available to indicate the probable migratory habits of this subspecies. The evidence is not perfectly conclusive since all the specimens of *argentinus* that I possess, both from the supposed breeding range and from the probable migratory routes, are dated from March to October, in the probable non-breeding season. As noted above, I have seen a number of specimens of *euleri* dated between October and March, probably from breeding populations. One or two non-breeding birds are from just within the breeding range of *argentinus* and may represent individual variants of *argentinus* or may be possible migrants of *euleri*. On the other hand, there are numerous non-breeding specimens of *argentinus* from parts of the range of *euleri*.

Six examples from Bahia are all definitely closer to *argentinus* than to *euleri* as is a Piauhy specimen. The dates of the Bahian birds are very late, up to October 28 (the Piauhy specimen was taken on June 19), and it is impossible to say with certainty that the birds in question were migrants. Pinto (1935, Rev. Mus. Paulista, XIX) does not list the species at all for Bahia and I have found no records of any form breeding within that state. More information on the birds of this area is highly desirable.

Matto Grosso birds are intermediate between *argentinus* and *euleri* but are much more like *argentinus* from which they differ principally by having the lower under parts definitely more strongly tinged with yellowish. They have the same dull brownish upper parts, far removed from the warm coloration of typical *euleri*. Some of them show a suggestion of greenish coloration that may indicate a trend toward *bolivianus*. For the present, however, I am unwilling to give a separate name to the Matto Grosso birds. A female was collected on October 18 with a set of eggs, thus establishing the breeding date for this region. A June bird from Calamá, Rio Madeira, is rather typical *euleri* and may be a migrant individual, but an October specimen from the Rio Preto should be from a resident population. It is in first annual plumage, rather more warmly brown on the back than adult Matto Grosso birds but not so rufous as examples in juvenal plumage. The chest

is less heavily marked than in *euleri* and about as in *argentinus*, but the throat and belly are quite yellowish. It appears to belong best with the Matto Grosso series, to which I am not prepared to put a distinctive name owing to the intermediate nature of the population.

Several Peruvian specimens, dated May, July, and August, are easily referable to *argentinus* and, no doubt, are to be considered as wintering individuals. Four October birds from the Department of Santa Cruz, Bolivia, indicate the probable breeding of *argentinus* in that region. On the other hand, one August bird from Mission San Antonio, Cochabamba, is not conclusive as regards nesting probabilities. Two other birds from the same locality belong to *euleri* and it is impossible to say, with this material, which is the breeding form.

Empidonax euleri bolivianus Allen

Empidonax bolivianus ALLEN, 1889, Bull. Amer. Mus. Nat. Hist., II, p. 86—Bolivia (Rusby coll.), probably Yungas of La Paz; Amer. Mus. Nat. Hist.

The type of *bolivianus* very clearly belongs to the greenish-hued group of birds formerly all included under the name *lawrencei* and considered to be specifically distinct from *euleri*. With nearly fifty examples of the birds of this group, I am able to find a certain amount of differentiation between the north-Venezuelan and Trinidad birds and the Peruvian and Ecuadorian specimens which justifies the division of *lawrencei* into two subspecies. The Venezuelan and Trinidad examples average decidedly brighter yellow on the belly (especially noticeable in several birds from the Cumaná region), and rather duller, often with a slight brownish tinge, on the back and chest which are more greenish in the birds from Perú and Ecuador.

The type of *bolivianus* is particularly pale on the belly, without much yellowish tinge, but the back and chest are not as bright greenish as the average Peruvian skin, having a slightly sootier tone. The specimen is older than any other I have from the combined range of the greenish-hued forms, and may have darkened with age. In any case, there is not enough distinction from the Peruvian series to warrant an attempt to keep this single specimen subspecifically apart and I refer all the resident Peruvian birds to *bolivianus*.

Peruvian specimens bear dates of various times during the year (June, July, August, October, November, and December), showing that residence is permanent. Three Ecuadorian examples are dated in February and April and eight birds from various points along the Amazon Valley were taken in June, July, and August. Two specimens from the lower Rio Negro, in Brazil, were obtained in January. This series as a whole, therefore, indicates that *bolivianus* is the resident form in the Amazonian region.

I am unable to get a clear picture of the molt or breeding season in Perú or the Amazonian region in general from the dates on the specimens at hand. A north-Peruvian bird is molting in December; an Ecuadorian, in February; a Rio Madeiran, in June; and a Rio Xingú individual, in August. There is a specimen in juvenal plumage from southeastern Ecuador, taken late in October; one from southeastern Perú, dated in November; one from the Rio Negro, Brazil, dated in January. It seems probable, therefore, that there is some variation in breeding season and molt according to locality within the Tropical Zone.

The immature plumage of *bolivianus* is not always distinguishable with perfect assurance from that of *euleri* or *argentinus*, since the upper parts are definitely brown. Nevertheless, there is a slight tinge of green usually present on the back, the throat and belly may be more strongly greenish yellow, the pectoral band is less heavy than in *euleri* but stronger than in *argentinus* and may have a slightly greenish suggestion.

One female from southeastern Perú is unusually interesting. At first glance it appears to be an example of *euleri* although the upper parts are not so warm brown and the under parts are somewhat more greenish yellow. The plumage is fresh and not quite so compact as in a fully adult bird although a molt appears to be all but com-

pleted, with the submedian rectrices now being replaced and the median pair still juvenal. The wings are juvenal in appearance though quite fresh. This specimen appears to be in a first-annual plumage retaining the colors of the juvenal but acquiring some of the compactness of feather-structure of the adult.

Reëxamination of some of the records of *E. euleri euleri* from other parts of Perú may show the specimens in question to be in somewhat similar condition, if not in full juvenal plumage. The localities involved, as I have stated under *euleri*, are Monterico, Jeberos, Huambo Chayavitas, Pebas, and one of the two from Yurimaguas. Taczanowski placed these records under a misidentified "*Empidochanes olivus*" which he described as dark olive above, a characterization that applies well to *bolivianus*. He also described the young as brown on the upper parts, which agrees with my own findings although the reference was transferred by Dr. Hellmayr to *euleri*.

Records from Perú which undoubtedly belong to *bolivianus* are from Iquitos, Huacamayo, and Puerto Yessup.

A single specimen from Suapuré, Río Orinoco, Venezuela, resembles *bolivianus* in its pale under parts but the olive of the upper parts has a more brownish tinge than is shown by any of the series of that form, agreeing better with some specimens of *lawrencei* to which I refer this example for the present.

Specimens Examined

E. e. euleri.—Brazil: Rio de Janeiro, La Raiz, 1 ♂; Therezopolis, 4 ♂, 1 ♀, 1 (?); Monte Serrat, 1 ♂, 1 ♀; Maceiras, 2 ♀; Espirito Santo, Serra de Caparão, 1 ♂, 3 ♀; Minas Geraës, Rio Caparão, 2 ♂, 1 ♀; Paraná, Rio Iguassú, 2 ♂; Corvo, 1 (?); Porto Almeida, 1 (?); Roca Nova, 2 ♂; São Paulo, Fazenda Cayoá, 1 ♀; Maranhão, Flores, 1 (?); Santa Catharina, Palmitos, 2 ♂, 1 (?); Rio Grande do Sul, Lagôa Vermelha, 1 ♀; west of São Lorenzo, 3 ♀; Sinimbú, 2 ♂, 2 ♀; Santa Cruz, 1 ♀; Candioto, 1 ♂; Lagôa de Forno, 1 ♂; Lagôa dos Patos, 1 ♂; Rio Madeira, Calamá, 1 ♂; Rosarinho, 1 (?); Rio Tapajoz, Igarapé Amorín, 1 ♀; Rio Negro, Hacienda Rio Negro, Manaos, 1 ♀. Uruguay: Quebrada de los Cuervos, 1 ♂[1], 1 ♀[1]. Argentina: Misiones, El Dorado, 1 ♀[1], 2 (?)[1]. Bolivia: Mission San Antonio, Río Chimoré, 1 ♂, 1 ♀. Paraguay: Chaco, west of Puerto Pinasco, 1 ♂. Perú: Yurimaguas, 1 ♀[1].

E. e. argentinus (× *euleri*).—Brazil: Matto Grosso, Chapada, 5 ♂, 5 ♀, 1 (?); Descalvados, 3 ♀; San Lorenzo River, 1 ♂; Rio Preto, Santa Isabel, 1 ♀.

E. e. argentinus.—Argentina: Buenos Aires, Pacheco, 1 ♂; Tucumán, Tafi Viejo, 1 (?); Concepción, 1 ♂[1]. Paraguay: Colonia Independencia, 1 (?); east of Caaguassú, 1 ♂, 1 (?); east of Yhú, 1 ♂; Abai, 1 (?). Bolivia: Santa Cruz, California, 2 ♂; Vermejo, 2 ♂; Mission San Antonio, Río Chimoré, 1 ♂. Brazil: Bahia, Iracema, 1 ♂; Baixão, 1 ♂, 1 ♀; Jequié, 1 ♂; Orobó, 2 ♂; Piauhy, Parnaguá, 1 ♂. Perú: Puerto Indiana, 1 ♀; Chuchurrás, 1 ♂; Vista Alegre, 1 ♀[1]; Tulumayo, Junín, 1 ♂.

E. e. bolivianus.—Bolivia: (no other locality), 1 (?) (type). Perú: Río Tavara, 2 ♂, 1 ♀; La Pampa, 1 ♂; Río Ucayali, Sarayacu, 1 ♂, 3 ♀; Río Amazonas, Puerto Indiana, 1 ♂; Apayacu, 1 ♂; Río Mazán, 1 ♂. Ecuador: San José, 1 ♂; Río Suno, above Avila, 2 ♀. Brazil: Teffé, 1 ♂, 1 ♀; Rio Madeira, Rosarinho, 2 ♂, 1 ♀; Humaythá, 1 ♀; Calamá, 1 ♂; Rio Xingú, Tapará, 1 ♂; Rio Negro, Igarapé Cacao Pereira, 2 ♂.

E. e. lawrencei.—"South America," 1 (?) (type). Trinidad: Princestown, 5 ♂, 2 ♀; Caparo, 3 ♂, 3 ♀. Venezuela: Cristóbal Colón, 1 ♀; Campos Alegre Valley, Cumaná, 1 ♀; Quebrada Secca, 1 ♀; La Tigrera, 1 ♂, 1 ♀; Hills of La Tigrera, 1 ♀; Río Orinoco, Suapuré, 1 ♀.

Terenotriccus erythrurus brunneifrons Hellmayr

Terenotriccus erythrurus brunneifrons Hellmayr, 1927 (April 11), Field Mus. Nat. Hist. Publ., Zool. Ser., XIII (5), p. 231—Tres Arroyos, Bolivia; ♂; Field Mus. Nat. Hist.

Peruvian specimens from localities south of the Marañón agree well with Bolivian examples in respect to the warmth of dorsal coloration and the presence of a decided ochreous-brown area on the forehead. They appear to be most nearly like *hellmayri* of the Pará region.

Records from Perú which are assignable to *brunneifrons* are from Yahuarmayo, Monterico, Borgoña, Cosñipata, Santa Cruz, Chamicuros, Chayavitas, and Jeberos.

Birds from northeastern Perú, north of the Marañón, and from eastern Ecuador are somewhat larger and less warmly colored

[1] Specimens in Field Museum of Natural History, Chicago.

above and appear to represent an undescribed form which may be known as follows.

Terenotriccus erythrurus signatus, new subspecies

TYPE from Puerto Indiana, Perú. No. 232,167, American Museum of Natural History. Adult male collected June 20, 1926, by Carlos Olalla and sons.

DIAGNOSIS.—Distinguishable from *T. e. brunneifrons* of Bolivia and Perú south of the Marañón by darker and less rufescent back and top of the head, with much less evident bright coloration on the forehead, duller auriculars, and deeper rufescence on the under parts and outer margins of the remiges; upper wing-coverts with rufous margins broader and more deeply rufous; size averaging somewhat larger.

RANGE.—Northeastern Perú, north of the Marañón, and eastern Ecuador.

DESCRIPTION OF TYPE.—Top of the head Dark Olive, with a dull tawny suffusion in a narrow frontal area, over the lores, almost obsolete over the orbit, and slightly developed behind the eye; lores whitish; auriculars dull Deep Olive-Buff; mantle anteriorly a little paler than the top of the head, brightening posteriorly into Buffy Olive; scapulars and lower back bright Hazel; upper tail-coverts more deeply colored, Sanford's Brown × Cinnamon-Rufous. Belly Cinnamon × Clay Color; breast and sides deeper in tone; chin and throat paler, near Cinnamon-Buff. Wings dusky, with outer margins of primaries finely cinnamomeous; secondaries with outer margins slightly broader and darker; tertials Tawny Olive with brighter outer margins; median and greater upper wing-coverts with most of outer webs deep Cinnamon-Rufous and inner webs dusky; lesser coverts like the scapulars; under wing-coverts like the sides of the breast, with a dark area at the base of the primaries; inner margins of the remiges narrowly cinnamomeous. Tail Sanford's Brown × Auburn, indistinctly duller apically. Bill (in dried skin) with maxilla blackish, mandible whitish; feet yellow. Wing, 54 mm.; tail, 38.5; exposed culmen, 8; culmen from base, 11; tarsus, 14.25.

REMARKS.—Female like the male in color but smaller. Wing, 49–50.25 mm. (av., 49.75); tail, 35–38 (av., 36.5). Males measure: wing, 52–57.25 (av., 53.9); tail, 37–42 (av., 39.3).

T. e. brunneiceps measures as follows. Males: wing, 48–52.5 (av., 49.3); tail, 35–41 (av., 38.8). Females: wing, 46–49.75 (av., 47.4); tail, 33–36 (av., 34.7).

The only record from Perú which is likely to appertain to *signatus* is from Iquitos.

This new form does not approach *fulvigularis* (of western Ecuador, western and northern Colombia, and Central America north to Nicaragua) which has the forehead about as strongly rufescent as in *brunneiceps* though of a paler tint and which is much clearer greenish in the hue of the upper parts. In some respects it stands between *brunneiceps* and the birds of southern Venezuela, but in certain details it is the extreme, in size and in average depth of color on the under parts and the exterior surface of the wings. The south-Venezuelan birds are not *erythrurus* as supposed, but are very distinct from that form and, being without a name, are described hereunder.

Terenotriccus erythrurus venezuelensis, new subspecies

TYPE from Esmeralda, Mt. Duida, Venezuela; altitude 325 feet. No. 274,562, American Museum of Natural History. Adult male collected October 6, 1928, by the Olalla brothers.

DIAGNOSIS.—Differs from *T. e. erythrurus* of the Guianas by the much clearer and deeper hue of rufous on the under parts, without the grayish shading of the breast and sides; throat more cinnamon-buffy, less whitish; upper parts darker, on average, and somewhat warmer in tone; rufous of wings and tail deeper.

Separable from *signatus* by slightly smaller size, grayer dorsal coloration without evident pale frontal patch, with a dusky area on the basal portion of the outer webs of the greater and median upper wing-coverts, with less rufescent lesser upper wing-coverts, and with slightly paler and more pinkish-tinged under parts.

RANGE.—Southern Venezuela on the upper Orinoco and Caura rivers and the region of Mt. Duida, reaching northwestern Brazil on the upper Rio Uaupés.

DESCRIPTION OF TYPE.—Top of head uniform Deep Grayish Olive; lores whitish; region behind the eye slightly buffy; auriculars dull olivaceous buff; mantle very little paler than the top of the head; scapulars with a tinge of Saccardo's Umber; lower back tinged with cinnamomeous, becoming Sayal Brown × Tawny Olive on the lower rump, and brightening to Sanford's Brown × Cinnamon-Rufous on the upper tail-coverts. Belly Clay Color × Ochraceous-Buff, very little deeper on the breast and sides; chin and throat light Ochraceous-Buff. Wings dusky, with outer margins of primaries finely margined with cinnamomeous; secondaries with broader margins of similar color; tertials Saccardo's Umber with brighter edges; greater and median upper wing-coverts with outer margins Cinnamon-Rufous, reaching the shafts only near the tips; lesser series like

the scapulars; under wing-coverts a little more deeply colored than the breast and with a dusky patch at the base of the primaries; inner margins of remiges narrowly cinnamomeous. Tail Sanford's Brown × Auburn, with an indistinctly darker terminal area. Bill (in dried skin) with maxilla blackish, mandible whitish. Wing, 51 mm.; tail, 37.5; exposed culmen, 6.75; culmen from base, 11; tarsus, 15.

REMARKS.—Female colored like the male but slightly smaller in size. Wing, 46–49 mm. (av., 47.4); tail, 33.5–38 (av., 35.9). The series of males measures: wing, 51–53 (av., 52); tail, 36.5–41 (av., 39.1).

This form is readily separable from its conspecies by the characters given, both individually and in series. It is more likely to be confused with *signatus* than with *erythrurus*, with which it has been included heretofore, but is different from both of these others. Two specimens from Tahuapunto, Rio Uaupés, Brazil, are exactly like the Venezuelan birds, although three skins from Tatú, just below the mouth of the Uaupés, are just as clearly referable to typical *erythrurus*, as are other Rio Negro specimens listed below. Pelzeln's Marabitanas and Rio Içanna specimens should be reëxamined to determine whether they belong to *erythrurus* or *venezuelensis*. The localities are between the ranges of the two forms as represented in the collections before me.

A good series of birds from the south bank of the Amazon, from Teffé to as far east as the Rio Tapajoz, shows a constant difference from several skins from the Rio Tocantins and the Pará district which, in turn, agree with the characters given for *hellmayri*, described from Pará. Since there is no available name for these Amazonian birds they may be described as follows.

Terenotriccus erythrurus amazonus, new subspecies

TYPE from Igarapé Amorín, Rio Tapajoz (left bank), Brazil. No. 288,790, American Museum of Natural History. Adult male collected July 2, 1931, by Alfonso M. Olalla.

DIAGNOSIS.—Differs from *T. s. hellmayri* of Pará and the Rio Tocantins by much more olivaceous, less rufous, mantle and forehead, very much duller rump, narrower rufous margins on the greater and median upper wing-coverts, and paler and duller under parts.

In general most resembles *fulvigularis* but is still very different, lacking the strong greenish tinge of the upper parts and the pronounced cinnamomeous forehead and having the bright edges of the upper wing-coverts narrower and the rump duller.

RANGE.—South bank of the Amazon from Teffé at least as far eastward as the Rio Tapajoz (right bank), extending up the Rio Madeira as far as Porto Velho.

DESCRIPTION OF TYPE.—Top of head Deep Olive without noticeably brighter forehead; lores whitish; a slight tawny tinge behind eye and on the auriculars; mantle Citrine Drab; scapulars Light Brownish Olive; rump largely Tawny Olive, brightening posteriorly and passing into Cinnamon-Rufous on the upper tail-coverts. Belly Clay Color × light Ochraceous-Buff; breast and sides somewhat deeper in tone; chin and throat light Ochraceous-Buff. Wings dusky with outer margins of primaries finely cinnamomeous buff; secondaries with margins a little wider; tertials Brownish Olive with noticeably brighter edges; median and greater upper wing-coverts with outer margins Cinnamon, mostly separated from the shaft by a dusky stripe; lesser coverts like the back; under wing-coverts like the breast but with a dusky patch near the base of the primaries; inner margins of remiges narrowly cinnamomeous. Tail Ferruginous × Cinnamon-Buff, indistinctly darker distally. Maxilla blackish; mandible whitish. Wing, 49.5 mm.; tail, 39; exposed culmen, 6.75; culmen from base, 10; tarsus, 15.

REMARKS.—Female like the male but smaller. Wing, 43–48 mm. (av., 46.1); tail, 34–36.5 (av., 35.3). Males measure: wing, 48–51 (av., 49.9); tail, 37–40 (av., 38.4).

The series from the region between Teffé and the Tapajoz and from the Rio Madeira as far upstream as Porto Velho is relatively uniform. A single bird from the Rio Roosevelt, "Camp 9" (near the head of the river), differs from all other available specimens of the different subspecies and may possibly represent an undescribed form. The back is more warmly brown than that of *amazonus* but not so rufescent as that of *hellmayri* or *brunneifrons* and the rump is relatively dull as in *amazonus*. The forehead is as in *amazonus*, not conspicuously different from the crown. The under parts are rather deeply hued. The greater and median upper wing-coverts have their outer webs almost entirely rufescent,

suggesting *signatus* but quite unlike *amazonus*. More material from this region will be required to determine the status of the resident members of the species.

SPECIMENS EXAMINED

T. e. erythrurus.—FRENCH GUIANA: Ipousin, 1 ♂. BRITISH GUIANA: Potaro Landing, 1 ♂, 2 ♀; Tumatumari, 1 ♂; Camacusa, 1 ♀; Ourumee, 1 ♀. BRAZIL: Rio Negro, Tatú, 1 ♂, 2 (?); Tabocal, 1 ♂; Mt. Curycuryari, 1 ♀; Santa Maria, 1 ♂; Yucabí, 1 ♂; Muirapinimá, 1 ♂; Rio Jamundá, Faro, 2 ♂.

T. e. hellmayri.—BRAZIL: Pará, Prata, 1 ♂; Santa Isabel, 1 ♂; Rio Tocantins, Cametá, 2 ♂.

T. e. amazonus.—BRAZIL: Rio Tapajoz, Igarapé Amorín, 2 ♂ (incl. type); Igarapé Brabo, 1 ♂, 2 ♀; Caxiricatuba, 1 ♂; Piquiatuba, 1 ♂; Tauarý, 3 ♂, 1 ♀; Rio Amazonas, Villa Bella Imperatríz, 1 ♂; Rio Madeira, Borba, 1 ♀; Igarapé Auará, 1 ♂; Rosarinho, 1 "♂" [= ♀]; Santo Antonio de Guajará, 1 ♂; Calamá, 3 ♂; Porto Velho, 1 ♀; Teffé, 1 ♂.

T. e. subsp.?—BRAZIL: Rio Roosevelt, "Camp 9," 1 ♂.

T. e. brunneifrons.—BOLIVIA: Tres Arroyos, 1 ♂; Todos Santos, 1 ♂; Mission San Antonio, 6 ♂; mouth of Río San Antonio, 1 ♂; San Mateo, 1 ♂. PERÚ: Río Tavara, 1 ♂; Montealegre, 1 ♂; Lagarto, 3 ♂, 2 ♀; Santa Rosa, 1 ♀; mouth of Río Urubamba, 1 ♀; Sarayacu, 1 ♂, 1 ♀; Orosa, 2 ♀; Samiria, 1 ♂.

T. e. signatus.—PERÚ: Puerto Indiana, 4 ♂ (incl. type). ECUADOR: mouth of Río Curaray, 1 ♂, 1 ♀; lower Río Suno, 3 ♂; upper Río Suno, 2 ♂, 1 ♀; below San José de Sumaco, 3 ♂, 1 ♀; Zamora, 1 ♂.

T. e. venezuelensis.—VENEZUELA: Mt. Duida, Esmeralda, 6 ♂ (incl. type), 1 ♀; Caño Seco, 1 ♂, 1 ♀; Caño León, 3 ♂, 1 ♀; Playa del Río Base, 1 ♂, 1 ♀, 1 (?); "Primer Campamento," 2 ♀; [western] foot of Mt. Duida, 1 ♀; Río Orinoco, mouth of Río Ocamo, 2 ♂, 2 ♀; opposite mouth of Ocamo, 1 ♂; Suapure, 1 ♀; Lalaja, 2 ♀; Nericagua, 1 ♂; Río Caura, Nicaré, 2 ♂, 1 ♀; La Prición, 3 "♀" [= ♂?]; La Unión, 1 ♀; Río Cassiquiare, Solano, 2 ♂, 2 ♀; El Merey, 1 ♂; opposite El Merey, 1 ♀; Buena Vista, 2 ♂; Río Huaynía, junction with Cassiquiare, 2 ♂. BRAZIL: Rio Uaupés, Tahuapunto, 2 ♂.

T. e. fulvigularis.—ECUADOR: Cachabí, 2 ♂; Río de Oro, 2 ♀. COLOMBIA: Puerto Valdivia, 2 ♀; San José, Cauca, 1 ♂; Alto Bonito, 2 ♂; "Bogotá" (trade skin), 1 ♂; Santa Marta, Jordan, 1 ♀. PANAMÁ: [Tacarcuna, Tapalisa, El Real, Boca de Cupe, savanna near Panamá, Barro Colorado, (near Lion Hill), Guaval, Bogava, Almirante, Wilcox Camp, Santa Fé], 19 ♂, 7 ♀, 1 (?). COSTA RICA: [Bonilla, Atalanta, El Pozo, Paso Real, Guapiles, Boruca, mouth of Matina River, Pozo del Río Grande, Puerto Jiménez, Volcan de Oso, Carrillo, Buenos Aires, Guacimo], 15 ♂, 6 ♀. NICARAGUA: Vizagua, 1 ♂; Los Sabalos, 1 ♀.

Myiobius barbatus barbatus (Gmelin)

Muscicapa barbata GMELIN, 1789, Syst. Nat., I (2), p. 933—based on DAUBENTON, Pl. Enl., 830, fig. 1; Cayenne.

A single specimen from Pomará, middle Río Marañón, Perú, is doubtfully referred here rather than to *amazonicus* which occupies northeastern Perú south of the middle and lower stretches of the Marañón. The Pomará bird is not as strongly marked as most of the series of *barbatus* from the Guianas, Venezuela, northern Brazil, and eastern Colombia and Ecuador, but it matches some examples of the typical form and has rather more definite pectoral shading of brown than any adult *amazonicus*.

There are no other records from Perú that may be assigned here without question. Certain records are in doubt as is discussed under the following form.

Myiobius barbatus amazonicus Todd

Myiobius barbatus amazonicus TODD, 1925 (July 15), Proc. Biol. Soc. Wash., XXXVIII, p. 96—Hyutanahan, Rio Purús, Brazil; ♂; Carnegie Mus.

The only Peruvian specimens of *amazonicus* I have seen are from the Ucayali Valley and the south bank of the Amazon below the mouth of this tributary. Hellmayr has referred here certain records from west of the lower Huallaga (Yurimaguas, Jeberos, and Chayavitas), presumably on the basis of Todd's earlier action in assigning these records to *barbatus* rather than to *atricaudus*. Actually, there is no certainty as to where these records belong, specifically or subspecifically. As already noted by Todd (1922, Proc. Biol. Soc. Wash., XXXV, p. 26) the measurements given by Taczanowski (1884, Orn. Pérou, II, p. 298) for "*barbatus*" are not consistent and although those of one specimen agree with those of members of the *barbatus* group, the dimensions of another example are better in accord with *atricaudus*. There is the possibility of a typographical error, as suggested by Todd, but I can see no reason to question the correctness of the measurements with the conse-

quent belief that Taczanowski had specimens of both species. Unfortunately, Taczanowski did not segregate his data and it is now impossible to say which birds were from which localities. Likewise it is uncertain whether the specimen (or specimens) of the *barbatus* group should be assigned to *amazonicus* or to typical *barbatus*.

A record of *Myiobius "xanthopygius"* from the "Upper Ucayali" (= near Cashiboya), if properly left in *barbatus* where it has been placed by authors, must belong to *amazonicus*.

The examination of comparative material from various parts of the specific range has led to the discovery that the birds from the south bank of the lower Amazon and the Rio Tocantins are quite different from *mastacalis* of southeastern Brazil and apparently are without a name. They may be known as follows.

Myiobius barbatus insignis, new subspecies

TYPE from Piquiatuba, Rio Tapajoz, Brazil. No. 287,271, American Museum of Natural History. Adult male collected May 26, 1931, by Alfonso M. Olalla.

DIAGNOSIS.—Differs from *M. b. amazonicus* of the upper Amazon Valley by paler yellow belly and brown-shaded breast and sides. Differs from typical *M. b. barbatus* of the Guianas, northeastern Brazil, Venezuela, eastern Colombia, and eastern Ecuador, by much paler yellow belly and rump and duller brown chest and sides. Differs from *M. b. mastacalis* of southeastern Brazil by very much duller under parts and paler yellow rump.

RANGE.—South bank of the lower Amazon from the Tapajoz to the Tocantins, possibly westward to portions of the valley of the Rio Madeira.

DESCRIPTION OF TYPE.—Top of head dark Olive Green with a central, concealed crest of Primuline Yellow, deepening to Wax Yellow in the middle and with the bordering yellow feathers tipped with dark Olive Green; back dark Olive Green; rump Naphthalene Yellow; upper tail-coverts sooty brown. Lores olive-tipped, buffy at base; auriculars Buffy Olive; an inconspicuous pale line around the eye on the eyelids; sides of breast light Buffy Olive with this color carried in less prominence across the chest; throat dull Marguerite Yellow; belly near Naphthalene Yellow; flanks with a narrow prolongation of the color of the sides of the breast but mostly like the belly; under tail-coverts slightly browner than Isabella Color and with inconspicuous dusky tips on the longest feathers preceded by a slightly paler area. Wings dusky brown with the outer margins of the primaries and secondaries, the exposed portions of the tertials, and the margins and tips of the upper wing-coverts Light Brownish Olive; under wing-coverts Pale Olive-Buff with a brownish area along the carpal margin and with the under primary-coverts sooty; inner margins of remiges narrowly but not very conspicuously pale. Tail blackish brown, very slightly double-rounded; outer margins of the rectrices basally a little lighter brown than the rest of the feathers. Maxilla dull, dark brownish; mandible whitish with narrow dark tip; feet dull, pale brownish. Wing, 62 mm.; tail, 49.5; exposed culmen, 8; culmen from base, 14; tarsus, 16.

REMARKS.—Female very similar to the male but somewhat smaller (wing, 58.5–59; tail, 49.5. Males: wing, 62–66; tail, 49.5–55.5). A single female from Barão Melgaço, Matto Grosso, is slightly larger but agrees best in color with the series of *insignis* while a male from Broken Canoe Rapids, Rio Roosevelt, agrees better with *mastacalis*, though it is not typical of that form and is larger than any other specimen I have (wing, 71; tail, 60). Possibly there is a highland form yet to be described from the Matto Grosso region to which both the Barão Melgaço female and the male from Broken Canoe Rapids belong.

I have been unable to find any specific differences between the members of the *barbatus* group and those of the supposedly distinct *sulphureipygus* group. It is true that there is a fairly sharp line of distinction between *aureatus* and typical *barbatus* which replace each other on the two sides of the Andes in Ecuador and Colombia. However, *aureatus* and *mastacalis* are very similar. Both have a strong tawny color on the breast and sides which gives them the same general appearance. The under tail-coverts of *mastacalis* usually are browner than those of *aureatus* but the difference is not constant. The tail of *mastacalis* is paler brown than that of *aureatus* but the difference is bridged by *amazonicus*, *barbatus*, and *insignis* and is of no specific value in this case.

It seems probable, therefore, that *sulphureipygus* and *aureatus* deserve inclusion in the *barbatus* group. It is possible that they, with *mastacalis*, represent the nearest approach to the ancestral form from which

the Amazonian representatives could have been derived to populate this central region after it ceased to be occupied by an arm of the Tertiary sea.

SPECIMENS EXAMINED

M. b. barbatus.—FRENCH GUIANA: Tamanoir, 2 ♂; Ipousin, 2 ♂. DUTCH GUIANA: interior, 3 ♂, 1 ♀; near Paramaribo, 1 ♂. BRITISH GUIANA: Potaro Landing, 1 ♂, 2 ♀; Mines district, 1 (?); Tumatumari, 1 ♂, 3 ♀; Wismar, 1 ♂, 1 ♀; Minnehaha Creek, 1 (?). VENEZUELA: Roraima, 1 ♀; Arabupu, 1 ♂, 3 ♀, 2 (?); Mt. Duida, "pie del cerro," 1 ♂, 1 ♀; "Campamento del Medio," 1 ♂; Río Huaynía, junction with the Cassiquiare, 2 ♂, 1 ♀; terrain between the junction of the Huaynía and the Cassiquiare, 1 ♀; Río Caura, La Prición, 1 ♀; Suapure, 2 ♂, 1 ♀. BRAZIL: Rio Uaupés, Ianarete, 1 ♂; Tahuapunto, 3 ♀, 1 (?); Rio Negro, Tatú, 2 ♂, 1 ♀; Yavanari, 1 ♂; Tabocal, 1 ♂; Mt. Curycuryari, "pie del cerro," 1 ♂; Rio Jamundá, Faro, 1 ♂, 1 ♀. COLOMBIA: Florencia, 2 ♂, 1 ♀; La Morelia, 1 ♂. ECUADOR: Río Suno, above Avila, 1 ♀; lower Río Suno, 4 ♂; mouth of Río Curaray, 1 ♂. PERÚ: Pomará, 1 ♀.

M. b. amazonicus.—BRAZIL: Rio Madeira, Humaythá, 1 ♀. PERÚ: Orosa, 1 ♂, 1 ♀; Río Ucayali, Lagarto, 1 ♀; Santa Rosa, 3 ♂, 3 ♀; Sarayacu, 1 [♀]; Río Pichis, Puerto Bermúdez, 1 ♀[1].

M. b. insignis. BRAZIL: Rio Tapajoz, Piquiatuba, 1 ♂ (type), 1 ♀, 1 (?); Tauarý, 1 ♂; Igarapé Amorín, 1 ♂; Caxiricatuba, 1 ♂; Rio Tocantins, Cametá, 1 ♀; Arumatheua, 1 ♂; Matto Grosso, Barão Melgaço, 1 ♀.

M. b. mastacalis.—BRAZIL: (no locality), 1 ♀ (one of the cotypes); "Bahia," 1 ♂, 4 (?); Bahia, Jequié, 1 ♂; Itirussú, 1 ♂; Cajazeiras, 1 (?); Santa Catharina, Joinville, 1 ♂; Minas Geraës, Rio Doce, 1 ♀; Espirito Santo, Lagôa Juparaná, 3 ♂, 1 ♀; Santa Barbara de Caparão, 1 ♂; Baixo Guandú, 1 ♀, 1 (?); Goyaz, Fazenda Esperança, 1 ♂, 1 ♀; Rio Roosevelt, Broken Canoe Rapids, 1 ♂[2]; "Guatemala" (errore), 1 (?).

M. b. aureatus.—ECUADOR: Río de Oro, 2 ♂, 1 ♀, 1 (?); Chimbo, 3 ♀; Cachabí, 3 ♂, 1 ♀; Naranjo, 1 ♂; Alamor, 1 ♂. COLOMBIA: Juntas de Tamaná, 1 ♀; Chocó, 1 ♂, 1 ♀; Baudó, 1 ♀; San José, 1 ♀; Barbacoas, 2 ♂; Alto Bonito, 1 ♂, 1 ♀; Nóvita, 1 (?); "W. Colombia," 1 (?); "Bogotá," 1 (?). PANAMÁ: [Wilcox Camp, Santa Fé, Río Calovevora, (Lion Hill), Bogava, El Banco, Barro Colorado, Cituro, Tapalisa, El Real, and Tacarcuna], 17 ♂, 7 ♀, 2 (?). NICARAGUA: (Los Sabalos, Las Cañas, Savala, Tuma, Río Tuma, Peña Blanca, and Río Grande), 10 ♂, 3 ♀. COSTA RICA: (El General, Pozo Azul, Guapiles, Lagarto, Miravalles, Boruca, Puerto Jiménez, Bonilla, Parismina, and Hacienda La Iberia), 14 ♂, 7 ♀.

? *M. b. sulphureipygus.*—GUATEMALA: Secanquim, 2 ♂, 3 ♀, 2 (?); Vera Paz, 2 (?).

[1] Specimen in Field Museum of Natural History, Chicago.

[2] Not typical.

Myiobius villosus peruvianus Todd

Myiobius villosus peruvianus TODD, 1922 (March 20), Proc. Biol. Soc. Wash., XXXV, p. 32—Río Tavara, southeastern Perú; ♂; Amer. Mus. Nat. Hist.

Three birds from the southeastern part of Perú agree in having the rump decidedly buffy, the yellow of the under parts dull, with that on the belly as restricted as in typical *villosus*, and with the broad stripe on the flanks of a somewhat warmer hue of brown than in either typical *villosus* or the birds of northeastern Perú and eastern Ecuador that heretofore have been referred to *peruvianus*. The northeastern birds differ also in other ways so consistently that I believe they are distinguishable from *peruvianus* and entitled to recognition as described below.

Three specimens from the Río Cadena, recorded by Berlepsch and Stolzmann, belong here without question.

Myiobius villosus clarus, new subspecies

TYPE from Lomo Santo (above Jaen), Marañón Valley, Perú; altitude 5000 feet. No. 185,876, American Museum of Natural History. Adult male collected May 31, 1924, by Harry Watkins; original No. 8057.

DIAGNOSIS.—Differs from both *M. v. villosus* of western Ecuador and western Colombia and *M. v. peruvianus* of southeastern Perú by clearer and more greenish coloration. Yellow of belly broader than in either of the other forms and lighter in tone; rump paler yellow than in *villosus;* clearer yellow, less buffy, than in *peruvianus.*

RANGE.—Northeastern Perú and eastern Ecuador.

DESCRIPTION OF TYPE.—Top of head Dark Citrine with the central portion occupied by a concealed crest of Lemon Chrome; the yellow feathers tipped with Dark Citrine, the anterior plumes with a slight tinge of orange-brown at the distal end of the yellow area; anterior and middle part of the back dark Olive Green; rump abruptly Martius Yellow; upper tail-coverts blackish with a very slight olivaceous tinge on the margins. Lores dull whitish; sides of head near Buffy Citrine; chin dull whitish with a slightly yellowish tinge; throat tinged with Barium Yellow; breast, sides, and flanks browner than Orange-Citrine; abdomen broadly bright Barium Yellow with some obsolete darker subterminal markings on the upper and

lateral feathers, giving a suggestion of mottling to the region; under tail-coverts buffy brown, barred with darker brown and with paler yellow tips; thighs near Raw Umber. Wings near Dark Mouse Gray with narrow external margins of Brownish Olive on the secondaries and tertials; upper wing-coverts margined with Brownish Olive; under wing-coverts Naphthalene Yellow with a browner area along the carpal margin and a grayish color at the base of the primaries; inner margins of remiges inconspicuously pale, more buffy on the secondaries. Tail dull blackish, slightly rounded (outer rectrices 3 mm. shorter than the others). Maxilla blackish; mandible whitish with a small dark tip. Feet brown. Wing, 70 mm.; tail, 59; exposed culmen, 9.25; culmen from base, 15.25; tarsus, 17.25.

REMARKS.—Female similar to the male in general coloration but smaller (wing, 64.75–67 instead of 70–75.5) and with the yellow of the crest replaced by Antique Brown or Antique Brown × Mars Yellow, usually less extensive than in the crest of the males.

I am uncertain where to place Taczanowski's record of *"Myiobius xanthopygius"* from Amable Maria since I have no comparative material from this vicinity. Specimens from the Huallaga and Marañón valleys all agree with the characters given above. Sclater (1888, Cat. Birds Brit. Mus., XIV, pp. 199, 201) includes the record under both *villosus* and *barbatus* although Taczanowski himself (1884, Orn. Pérou, II, p. 299) places it solely under *villosus*. It is probable, therefore, that the specimen was really of the *villosus* group and not of the *barbatus* one. The locality is rather closer to the otherwise known range of *clarus* than to that of *peruvianus*, judging by the segregation exhibited in many other cases of other species of birds. For the present, therefore, the Amable Maria record may be transferred to *clarus* pending evidence to refute this assignment.

Records from Perú thus may include Huambo, Amable Maria, and Perico.

SPECIMENS EXAMINED

M. v. villosus.—COLOMBIA: Cocal, 1 ♀; Ricaurte, 1 ♂, 1 (?); "Bogotá," 1 ♀. ECUADOR: Mindo, 5 ♂, 1 ♀.

M. v. clarus.—ECUADOR: below San José, 1 ♂, 1 ♀; Río Suno, above Avila, 4 ♂; mouth of Río Curaray, 1 ♀. PERÚ: Lomo Santo, 2 ♂ (incl. type); Huarandosa, 1 "♂"; Río Negro, west of Moyobamba, 1 ♂; Santa Rosa, Río Marañón, 1 ♂; San Ignacio, 1 ♂, 2 ♀; Huachipa, 1 ♂[1], 2 ♀[1].

M. v. peruvianus.—PERÚ: Río Tavara, 1 ♂ (type); Santo Domingo, 1 ♂; Inca Mine, 1 ♂.

Myiobius atricaudus portovelae Chapman

Myiobius atricaudus portovelae CHAPMAN, 1924 (Oct. 18), Amer. Mus. Novitates, No. 138, p. 3—Portovelo, Ecuador; ♂; Amer. Mus. Nat. Hist.

A specimen from Tumbez, one of the paratypes of the subspecies, is the only specimen of this form recorded from Perú. The records from Moyobamba and the Chanchamayo Valley were incorrectly assigned to *portovelae* and, in the light of additional material from the same general region, are referable to a new form which may be known as follows.

Myiobius atricaudus adjacens, new subspecies

TYPE from Puerto Indiana, Perú. No. 232,-165, American Museum of Natural History. Adult male collected July 16, 1926, by Carlos Olalla and sons.

DIAGNOSIS.—Differs from typical *M. a. atricaudus* of Panamá by browner back and warmer brownish breast, sides, and upper margin of the flanks. Distinguished from *M. a. portovelae* of western Ecuador by much darker coloration throughout.

RANGE.—Lower Marañón Valley of northern Perú and eastern Ecuador, probably east to the left bank of the Rio Madeira, Brazil.

DESCRIPTION OF TYPE.—Top of head Dark Greenish Olive with a concealed crest of Strontian Yellow extending anteriorly as far as the middle of the orbits and with each of the yellow feathers tipped with olive, least prominently on the central feathers; back Olive × Saccardo's Olive; rump broadly light Primrose Yellow; upper tail-coverts blackish. Lores and subocular region buffy, passing into the color of the back on the posterior auriculars and sides of the neck; breast Isabella Color × Light Brownish Olive; somewhat darker on the sides; throat very little paler; flanks with upper border colored like the chest but lower border and femoral area like the belly which is broadly Primrose Yellow; thighs and under tail-coverts rather grayer than Light Brownish Olive. Wings brownish black with external margins of remiges (except outermost) Brownish Olive; upper wing-coverts dusky, margined with Brownish Olive; under wing-coverts brownish buff, dusky near bend of the wing; inner margins of remiges inconspicuously pale. Tail

[1] Specimens in Field Museum of Natural History Chicago.

black (decidedly darker than the remiges), rounded (outer feathers 5 mm. shorter than the middle ones). Bill with maxilla dark brown; mandible dull whitish with slightly darker tip. Feet brown. Wing, 59 mm.; tail, 52; exposed culmen, 8; culmen from base, 13; tarsus, 17.25.

REMARKS.—Female similar to the male but smaller (wing, 55–57 mm.; tail, 50–56) and with coronal patch variable, sometimes only a little less developed than in the male; sometimes nearly obsolete.

One specimen from Rosarinho and another from Humaythá, both on the left bank of the Rio Madeira, Brazil, are not certainly referable to *adjacens* but appear to belong here rather than with the form of the lower Amazon next to be described. Both specimens are in imperfect condition but have the femoral area more definitely yellow than brownish. More material from the Madeira will be needed to clarify the identity of the resident form.

Other than the specimens listed below, there are no certain records from Perú assignable to *adjacens*. Taczanowski (1884, Orn. Pérou, II, p. 298) included in his account of "*barbatus*" the measurements of one bird which agree with the dimensions of the *atricaudus* group but not with *barbatus*. Todd (1922, Proc. Biol. Soc. Wash., XXXV, p. 26) suggests the possibility of a typographical error in regard to the given length of the wing and thinks that the specimen in question probably was a member of the *barbatus* group. The probability is equal, however, that it belonged to the present species and that the measurement given was correct. In such event, the specimen must have belonged to the form I have described above. Unfortunately, Taczanowski does not state whether the small-winged bird came from Jeberos, Chayavitas, or Yurimaguas, the three localities from which he records "*barbatus*." Exact citation of the locality is, therefore, impossible.

A series of over twenty birds from the Rio Tapajoz, the Tocantins, and the Pará district furnishes an unexpected extension of the specific range of the *atricaudus* group, surprising rather because it has escaped detection heretofore than because of any unusual position of the area with respect to previously known parts of the range. As a matter of fact, this critical region formed a hiatus which is now closed, making a much more satisfactory map of the specific distribution. Since this lower Amazonian-Pará form is different from the other subspecies of the group, it may be named and described as follows.

Myiobius atricaudus connectens, new subspecies

TYPE from Mocajuba, Rio Tocantins, Brazil. No. 431,136, American Museum of Natural History. Adult male collected November 19, 1931, by Alfonso M. Olalla.

DIAGNOSIS.—Nearest to *M. a. adjacens* of eastern Ecuador and northeastern Perú but back usually more brownish and flanks more broadly brown, leaving the yellow of the belly distinctly more restricted to the median area which, in turn, may be tinged or overlaid in part with brownish.

RANGE.—South bank of the lower Amazon from the Tapajoz eastward to the Pará district and western Maranhão.

DESCRIPTION OF TYPE.—Top of head Dark Greenish Olive with a central, concealed crest of Strontian Yellow extending anteriorly about as far as the middle of the orbits and with olive tips on the marginal feathers; back dark Olive Citrine; rump broadly light Primrose Yellow; upper tail-coverts blackish. Lores and subocular area buffy, passing into the color of the back on the posterior auriculars and sides of the neck; chin and throat light buffy; breast dull brownish Isabella Color; sides darker with a broad stripe of the same hue extending posteriorly along the flanks and through the femoral area; belly dull buffy Primrose Yellow medially, tinged with buffy brown laterally; thighs and under tail-coverts somewhat grayer than Light Brownish Olive. Wings and tail as described for *adjacens* but tail (in the type) with outermost rectrices 8 mm. shorter than median ones. Maxilla sooty brown; mandible dull whitish with dusky tip. Feet brown. Wing, 63 mm.; tail, 59; exposed culmen, 9; culmen from base, 14; tarsus, 16.5.

REMARKS.—Female similar to the male but smaller (wing, 52–59 mm.; tail, 50–53; males, wing, 59–64.25; tail, 54–59), and with crest less developed than in the male, sometimes reduced to a mere suggestion of a tawny tinge in the occipital region.

The expansion of the brownish stripe along the lateral under parts shows a definite trend toward *ridgwayi* of southeastern Brazil which has the entire under parts bright ochreous, but I have seen no specimens that come anywhere near the point of bridging the gap. As a matter

of fact, *M. a. snethlagei* occupies the intervening region, in eastern Maranhão, Ceará, Pernambuco, and northern Bahia, and is quite sharply delimited taxonomically from *connectens* though very close to *portovelae* of western Ecuador, and *snethlagei* does intergrade with *ridgwayi*. One specimen from Viçosa, Ceará, is exactly intermediate between the two, perhaps slightly nearer *snethlagei*, and one specimen of *ridgwayi* from Santa Barbara de Caparão, Espirito Santo, has a slight tendency toward *snethlagei*. With this evidence, it seems no longer necessary to maintain specific distinction for *ridgwayi*.

The resemblance of *snethlagei* to *portovelae* furnishes yet another case of the similarity of peripheral forms which may have a significant bearing on the possible comparative antiquity of these two forms.

Specimens Examined

M. a. atricaudus.—Costa Rica: Buenos Aires, 2 ♂, 1 ♀; Pozo del Río Grande, 1 ♂. Panamá: [Lion Hill], 1 "♂," 1 ♀ (cotypes); Santa Fé, Veraguas, 1 ♀; Boqueron, Chiriquí, 2 ♀; Chiriquí, 1 ♂; Porto Bello Trail, 1 ♂; La Chorrera, 1 ♀; El Real, 1 ♂; Cape Garachiné, 1 (?); savanna near Panamá, 1 ♂, 1 ♀, 4 (?); Cerro Montosa, Cape Mala Peninsula, 1 ♂; Tocoumé, 1 (?); Cebaco Island, 1 ♂. Colombia: Dabeiba, 1 ♂; Caldas, 2 ♂; Malena, 1 ♂; Río Frío, 1 ♂; Barbacoas, 2 ♀.

M. a. portovelae.—Ecuador: Portovelo, 5 ♂ (incl. type), 1 ♀, 2 (?); Isla Puna, 1 ♀; Alamor, 1 ♂; Santa Rosa, 2 ♂, 1 (?); Jubones, 1 ♂; Cebollal, 1 ♀; Río de Oro, 2 ♂; Naranjo, 2 (?); Bucay, 1 ♂, 1 ♀; Chongon Hills, 1 (?); Duran, 1 ♂; Chimbo, 1 ♂, 1 ♀; Esmeraldas, 2 ♀. Perú: Tumbez, 1 ♀.

M. a. adjacens.—Ecuador: Zamora, 1 ♂, 1 ♀. Perú: Puerto Indiana, 1 ♂ (type), 1 ♀; Sarayacu, 1 ♂, 2 ♀; Río Seco, west of Moyobamba, 1 ♂; Moyobamba, 2 ♀[1]; Río Colorado, Chanchamayo, 1 ♂[1]. Brazil: Rosarinho, 1 (? = ♀); Humaythá, 1 ♀.

M. a. connectens.—Brazil: Rio Tocantins, Mocajuba, 3 ♂ (incl. type); Baião, 3 ♂, 2 ♀, 1 (?); Rio Tapajoz, Caxiricatuba, 4 ♀, 1 (?); Tauarý, 2 ♀; Rio Jamauchim, Tucunaré, 1 (?); Prata, Pará, 3 ♂, 2 (?); Maranhão, Kelsú, Rosario, 1 (? = ♀).

M. a. snethlagei.—Brazil: Maranhão, Codó, Cocos, 1 ♂ (type)[1]; As Mangueras, Flores, 1 ♂; Tabocas, 1 ♀; Pernambuco, Brejão, 1 ♂; Garanhuns, 1 ♂; Bahia, Santa Ritta, 1 ♂; Ceará, Viçosa, 1 ♀[2].

M. a. ridgwayi.—Brazil: Rio de Janeiro, Therezopolis, 1 ♂; Monte Serrat, 1 ♂; São Paulo, Fazenda Cayoá, 1 ♀; Victoria, 2 ♂, 1 ♀; Espirito Santo, Santa Barbara de Caparão, 1 ♀.

M. a. modestus.—Venezuela: Caicara, 2 ♂, 1 ♀; La Cascabel, Río San Feliz, 1 ♀.

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[1] Specimens in Field Museum of Natural History, Chicago.

[2] Intermediate between *snethlagei* and *ridgwayi*.